

## **REMARKS/ARGUMENTS**

At the outset, Applicant wishes to thank the Examiner for withdrawing the finality of the previous rejection and the previous grounds of rejection under 35 USC 112, 2<sup>nd</sup> paragraph.

### **The Amendments**

In response to the Office Action mailed June 19, 2009, Applicants have further amended independent claims 1, 30, 38 and 49 to make clear that the referenced polymeric composition including an internal release agent is a polymeric composition that is blended with the release agent. A basis for this amendment may be found, for example, at p. 17, lines 1-5 (Par. 64). The independent claims have also been amended to make clear that the polymeric composition includes both a thermosettable composition and a photocurable composition. Claim 59 has been amended to correct an inadvertent typographical error in the spelling of "octadecyl". Claims 61-69 are new. Basis for these claims may be found, for example, at Par. 49 of the application.

### **The Rejections**

Claims 1-6, 8, 10-17, 19, 30, 35-47, 49 and 55-60 are now pending. All claims have been rejected. These rejections are believed inapplicable to the claims as amended.

### **The Section 112 Rejection**

Claim 59 was rejected under 35 USC Section 112 as failing to comply with the written description requirement. This rejection is believed due to a typographical error in the spelling of "octadecyl". This spelling error has been

corrected. Written description may be found, for example, at p. 9, lines 7 and 10 (Par. 34).

#### The Double Patenting Rejections

Claims 1-4, 6, 8, 15-17, 19, 30, 35-40, 42-47, 49, 55-56, 58 and 60 have been rejected under the doctrine of non-statutory obviousness-type double patenting in view of United States Patent No. 5,772,905 issued to Chou in view of U.S. Patent No. 5,731,086 issued to Gebhardt. It is believed that these rejections are inapplicable to the claims as amended.

It is well established that for a combination of references to obviate a claimed invention, the references must disclose each and every limitation of the claim.

The invention in the present case relates to compositions and processes for nanoimprinting (imprinting patterns with at least one feature having a lateral dimension of less than 200 nanometers). This involves replicating features having dimensions less than 1/10,000 the thickness of a human hair. In previous patents, Applicant Chou demonstrated that such nanoscale features could be replicated in thermoplastic films and by using a mold that is pre-treated with a release material.

In contrast, the present application teaches that the mold pre-treatment is a step that is preferably eliminated in order to increase manufacturing throughput (Application, par. 11). Moreover, the present application further notes that the

use of thermosetting plastic films require cooling in the mold that consumes process time and can lead to alignment problems (Application, par. 10).

The present application further teaches that these problems can be ameliorated by modifying the process. The film in the modified processes comprises a polymeric composition that includes an internal mold release agent. In addition, the polymeric composition includes both a thermosettable polymeric composition and a photocurable polymeric composition. (Application, Par. 40). The modified processes increase throughput by reducing time lost in pre-treating the mold and waiting for cooling in the mold. Each of the amended independent claims is specifically directed to such processes. The cited art neither recognizes these throughput problems in nanoimprinting nor teaches their solution.

The Examiner has cited Gephardt, et al. as teaching the use of polymeric composition with an internal release agent, citing Col. 48, lines 30-40. A careful reading of this citation in relation to Figure 1 (to which it relates) makes clear that the referenced release material is not internal to the polymeric composition. The release agent is coated on the surface of foil sheet 14 that contacts film 11 when tool 13 presses together the together the foil 14, the film 11 and the substrate 12. This is confirmed at Col. 49, lines 4-9, referring to Fig. 1E.

"If foil 14 does not contain a release agent, the adhesive nature of film 11 will tenaciously bond foil 21 to film 11. However, if it is desired to use foil 14 as a shaping assist, then foil 21 may be pulled from contact with film 11 provided that the release agent was provided on the side of film 14 to make contact with film 11.

The release agent is applied to the foil, not blended into the polymer. Indeed, the film is described as having an adhesive nature that will tenaciously bond. Further, the release agent is not a mold release agent because the foil sheet 14 intervenes between the mold (tool 13) and the film 11.

It is possible that the Examiner's rejection was made assuming that a release layer on a foil film pushed against a polymer film is an internal release agent. Accordingly, to prevent any such ambiguity, Applicant has amended the independent claims to recite that the release agent is blended with the polymeric composition.

The Examiner has also cited Gebhardt, et al., Col.10, lines 1-35 and Col. 11-12, as teaching "to use thermosettable polymer composition and a photocurable polymer composition". However a careful review of these cited sections reveals nothing more than several references to a thermosetting resin film and none to a photocurable composition. They do not teach a composition comprising both a thermosettable composition and a photocurable composition as recited in applicant's independent claims.

In view of the foregoing it should not be clear that the proposed combination of the Chou '905 patent and Gebhardt fails to teach or suggest the limitation of Applicant's independent claims 1, 30, 38 and 49 and the remaining claims dependent thereon, including the new dependent claims.

Claims 1-6, 8, 10-17, 19, 30, 35-47, 49, 55-58, and 60 have also been provisionally rejected on the ground of non-statutory obviousness-type double patenting as unpatentable over claims of copending Application No.11/980,918 in

view of Gebhardt. Applicants would note that this rejection is merely provisional, as the allowable claims in 11/980,918 have yet to be determined. Moreover, the above-noted deficiency of Gebhardt to disclose an internal mold release agent would apply equally well to this second proposed combination.

Accordingly, all claims now fully comply with the provisions of 35 USC Sections 101 and 112 and are now in condition for allowance. Reconsideration and favorable action in this regard are therefore earnestly solicited.

Respectfully submitted,

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